

Trends in Biomedicine in Finland
ISBN 951-98382-1-X
ISSN 1236-923X

BIOLOGISEN LÄÄKETIETEEN SUUNTAUKSIA XII:
Leptiinistä melatoniiniin

Suomen Fysiologiyhdistyksen vuosisymposiumi
24.-25.11.2000
Joensuun Yliopisto, Joensuu

TRENDS IN BIOMEDICINE IN FINLAND XII:
From leptin to melatonin

Annual Meeting of Finnish Physiological Society:
24th and 25th November, 2000
University of Joensuu, Joensuu, Finland

Symposiumin esitelmälyhenteet

Abstracts & Essays

Toimittaneet:
Editors:
Tuomas Westermarck
Matti Vornanen
Erkki Antila
Pekka Arosho



Järjestäjänä Suomen Fysiologiyhdistys r.y. ja Suomen Biologisen
Lääketieteen Yhdistys r.y.

These sessions were arranged by the Finnish Physiological Society
in collaboration with the Finnish Society for Biological Medicine.

LUMINESCENCING SPOTS AND HETEROGENOUS RESPONSES IN FINGERTIP MICROCIRCULATION

O. Hänninen, S. Kolmakow, K. Korotkov, R. Avagyan, and M. Teppone
Department of Physiology, University of Kuopio, Finland,
Institute of Physics, Mechanics and Optics, Saint-Petersburg, Russia

The aim of present experiment was to clarify, if the microcirculation varies in different sites on volar surface of distal phalanx of finger in a psychophysiological test.

Eight volunteer adult subjects who claimed themselves as hand mediated healers were examined with noninvasive and painless methods. After cleansing the skin of the volar surface of distal phalanx of left middle finger it was covered by a thin dielectric film. The low electrical resistance points were visualized by using negative and positive air plasma (generator: ACU Vision-04, Coloyaro 2000 Ltd., Moscow, Russia). The electroluminescent points were marked with pencil on skin. The microcirculation of the fingertip was recorded in four points of luminescence and one control point in the non-luminescent area in the middle of the pad using ultrasound Doppler with working tip Ø 1.5 mm and frequency of 20 MHz (Minimax-Doppler-K, Minimax Ltd., St. Petersburg, Russia). The responses to electromagnetic field impulses (1000 Hz, 8kV, 20 msec impulse duration) were tested by analyzing the gas discharge pattern (GD-image) around the right middle fingertip (CrownTV, Kirlionics International Ltd., St. Petersburg, Russia) before and during simulated healing test. The areas of these images were calculated (background 255, removing fragments up to 10 pixel). After that the blood microcirculation was recorded in same points as at beginning of the experiment.

During visualization cyclically luminescencing spots (diameter ~ 1 mm) like an oval chain of beads were seen in the volar rim of the distal finger phalanx. The response of points to negative or positive air plasma administration and the level of their luminescence varied. No luminescencing spots were detected in central pad area, where the control microcirculation was also recorded. Among volunteers studied there were different responses to electromagnetic field impulses, but a decreasing trend of GD response during pseudohealing test prevailed. Energy emission pattern in GD-images was frequently registered during the task. The blood microcirculation of the pad center showed a small increase after the task and clearly more marked increase was registered in active luminescencing spots in the volar rim of the distal phalanx.

In conclusion: the microcirculation and its variation at the luminescencing spots in the volar rim of fingertip have not been previously reported. It appears that people can with their will modify there their circulatory and emissive responses during a psychophysiological test.